

Remarks

This preliminary amendment is submitted concurrently with a request for continued examination and a Petition for Extension under 37 C.F.R. §1.136(a). Applicant hereby responds to the official action mailed September 8, 2006 by amending the claims to clearly patentably distinguish over the prior art of record.

This amendment advances prosecution by narrowing the claims and is proper upon Request for Continued Examination. No new matter is presented.

Claims 1-11, 18 and 20-22 were rejected as obvious over a combination of Krishnamurthy (US 5,469,188) in view of Lau (US 6,525,746). The claims have been amended to more particularly and distinctly define the invention and to better distinguish over the prior art of record.

Both of the prior art references concern video editing workstations that operate on stored video frames. The prior art references operate exclusively on one picture or frame at a time. The cited prior art workstations have capabilities for the user to select an area of the particular frame being shown, for example to select a particular pixel position with crosshairs in Krishnamurthy or to outline and enlarge a box chosen arbitrarily by the user in Lau. The selected pixel in Krishnamurthy can be the subject of numerical readouts. The nature of the prior art data readout, however, is fixed. If the user seeks to focus on one pixel versus another at different spots in the static picture frame, the numeric data content for a newly selected pixel may be different from that of the previously selected pixel. However, the prior art display does not change in format. The data values change for the new pixel but the display format does not change.

Applicant's independent claim 1 has been amended to make clear that the signal being analyzed is a changing video picture, not merely a static next frame as in the prior art, and that the claimed method and apparatus are configured such that the nature of the formatted display is caused to change when a selection criteria is met as the video picture proceeds through successive pictures and frames, i.e., in actively progressing video. The claimed method and apparatus are different from a display as in

Krishnamurthy or Lau. The prior art displays do not automatically change in format. In the prior art that responds to selection criteria (i.e., Krishnamurthy), the data content of one pixel may be different from another, but the format of the display remains the same.

The distinct aspects of applicant's claimed invention can be appreciated with respect to the "auto locate sample" mode which as claimed operates not only to find a pixel that meets a given criteria, but to reformat the display to select or redirect the zoom area and also to switch the formatting of the display among different predetermined modes. There is no disclosure or suggestion of this subject matter in the cited prior art.

In the "Response to Arguments" section of the official action, the examiner replies to applicant's previous arguments to the effect that Krishnamurthy lacks the aspects of selecting a particular area of the displayed image for scrutiny, and selectively changing the nature of the data that is to be displayed. The examiner points to the Krishnamurthy at col. 2, lines 8-30, which mention determining and flagging pixels characterized by amplitude, saturation or frequency errors; and col. 3, lines 36-40, which state that Krishnamurthy's NEXT and PREV buttons cause the cursor cross hairs 36 to move to the next or previous pixel that have been flagged for meeting the error criteria.

Krishnamurthy's jumping from one pixel to another on a frame to direct scrutiny to the pixels in the frame that meet an error criterion falls short of applicant's technique of changing the nature of a formatted display when an error occurs in a video signal of successive frames. According to applicant, upon occurrence of an error, not only is the cursor moved to the error positions, but the display is changed in its format. The display can be changed, for example, from a full picture display mode to a shared display including the picture, a zoom-in on the error pixel area, graphs such as amplitude or vectorscope plots and/or tabular numeric data. This aspect is not found in the prior art.

Krishnamurthy's manually triggered redirection of the cursor to and from the NEXT and PREV pixel that meets a numeric error criteria in a static frame does not

disclose or suggest the possibility of changing the format of a display when a data arises in a moving picture according to a variable user selection such that the nature of the display is changed as presented to the user. Lau's delineation and resizing of boxes selected arbitrarily likewise to not meet the invention claimed. The aspects of changing display format in response to a data criterion being found met by successive fields or frames of video, are particularly defined in claim 1 as amended. Claims 18 and 20, which previously defined moving the area of scrutiny but did not require altering the format, have been canceled without prejudice.

In the comments in the official action, the examiner replies to applicant's arguments to the effect that Krishnamurthy does not disclose using error criteria as a trigger to switch to a different set of content types in the formatted display. In reply to applicant's arguments, the examiner points out that Krishnamurthy discloses checking amplitude, saturation and frequency errors. These are three error criteria and not three display format possibilities. The examiner points out Krishnamurthy's NEXT and PREV button that moves the cursor 36 to the next or previous pixel that exhibited the selected error. This subject matter relates to moving the cursor cross hairs. There is no disclosure in Krishnamurthy of changing the nature of the formatted display. Krishnamurthy's display remains the same. The cross hairs may move to identify a different pixel and new data appears for that pixel, but the format of the Krishnamurthy display is fixed. The display always shows the picture with crosshairs and the graphic and tabular areas shown in Fig. 2. Krishnamurthy's display is fixed.

Col. 3, line 13 of Krishnamurthy states that selection of the preanalysis function brings up a panel display 30 such as shown in Fig. 2. There is no mention or suggestion of any other panel display that is different from the display shown. There are provisions for invoking one function or another, but such a selection only enables or disables the appearance of data in data boxes that are fixed permanently in the display area. The data boxes of Krishnamurthy are marked by light/dark indicators that represent which cursor jumping selection criteria is active. (In Fig. 2, the criteria appears to be saturation as opposed to the alternatives of frequency and amplitude.)

The reason that Krishnamurthy needs these light/dark indicators is because the display permanently contains all the data boxes. It is necessary to mark which of the always-appearing areas are enabled. The format of the display is not changed upon a determination that data meets a selection criteria.

There is no suggestion in Krishnamurthy that it might be possible or desirable to cause a different format to arise when a saturation error occurs versus an amplitude error or the like. Krishnamurthy and Lau both lack any disclosure or suggestion of a capability to changeably select display formats such that a new format arises with a new data condition selected by the operator.

The claims have been amended so as not to rely wholly on the aspect of directing attention to a different area of scrutiny. Applicant's claim 1 defines both moving to a new area of scrutiny when a data condition arises, and also reformatting the display in response to such condition.

In this way, applicant's available display area can be devoted to test displays that have a relationship to the selection criteria, unlike Krishnamurthy, wherein there is no change in the format of the display and the sole difference upon operation of the NEXT or PREV button (apart from data content) is to move the cursor cross hairs and display the numeric data of the pixel at the new location, using the very same display format as before.

Krishnamurthy cannot change from a full display of the picture to a test equipment display, cannot change from a full picture to a zoom focused on a zone on the display area, cannot change to a different allotment of display areas to pictures versus graphs versus lists, cannot change which parameters are to be plotted in one or more graphic plots, and so forth. Krishnamurthy does not disclose or suggest changing to a different display format in response to a detected data condition.

This aspect of applicant's invention is particularly defined in claim 1 as amended. Neither Krishnamurthy nor Lau nor any routine selection of their features meets

applicant's claim 1 as a whole. Claims 2-14 define additional aspects that are not met in the prior art and are allowable by dependence and also of their own account.

As to the specification, applicant has acceded to the requirement to delete the mention of "counted pixel coordinates" that was proposed to be added by amendment, thereby obviating the objection on grounds of new matter.

As to the rejection of claim 1 under 35 U.S.C. §103, reconsideration is requested based on the foregoing comments. In addition, applicant specifically points out the following inaccuracies in the official application of the Krishnamurthy and Lau references to the claims, or to the selective combination of aspect from these references.

Regarding Krishnamurthy, the official action asserts (page 5, lines 2-5) that Krishnamurthy's display window 32 meets the claimed representation of the video picture contained in the video input signal. In fact, Krishnamurthy neither discloses nor suggests any way to test a video picture of a video signal. Krishnamurthy only discloses a pixel by pixel progression through individual static picture frames of a video picture and not a way to change a formatted display in reaction to changing data conditions during active video. Applicant's claim 1 defines a video input signal including at least one of successive picture frames and fields containing a video picture.

The official action asserts (page 5, lines 13-15) that Krishnamurthy has a status window 37 and a zoomed area of particular scrutiny in the status window 37, referring to Fig. 2. Reconsideration is requested. Krishnamurthy does not zoom or enlarge or divide the picture so as to establish an area of scrutiny. Krishnamurthy only moves crosshairs that locate a single pixel in the full image. Even if one regarded the cross hairs as a zoom to an particular "area," which appears to be unwarranted, there is no basis to conclude that in the prior art that a change of format is adopted in response to the detection of predetermined data conditions. The prior art lacks any disclosure or suggestion of changing the formatted nature of a display in response to data conditions.

At page 6, lines 1-2, the official action allows that Krishnamurthy does not disclose a separate zoom window but posits a combination with Lau, wherein “subordinate” windows can be opened or closed, moved or resized. Even assuming that Lau discloses zooming, there is no objective reason to alter Krishnamurthy to provide a zoom window. Krishnamurthy is only interested in showing the location in the full picture of an error pixel. Both Krishnamurthy and Lau operate on static frames one at a time. It is only by use of improper hindsight that one might suggest altering Krishnamurthy to zoom to the cross hair position automatically and/or similarly to reformat the display because an error has been detected, and otherwise to show the full picture. Lau’s disclosure of manual box selection, resizing and zooming does not provide a motivation to alter Krishnamurthy in this way.

The claims as amended particularly and distinctly define the subject matter of the invention. The formal matter to which the examiner refers has been corrected. The differences between the invention and the prior art are such that the subject matter now claimed as a whole is not shown to have been known or obvious. Reconsideration and allowance of the claims are requested.

Respectfully submitted,

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